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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/702,441

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Gaelle Brun

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EXAMINER

CHANNAVAJJALA, LAKSHMI SARADA

ART UNIT

PAPER NUMBER

1611

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/702,441	Applicant(s) BRUN ET AL.	
	Examiner LAKSHMI CHANNAVAJJALA	Art Unit 1611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 February 2011.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9, 11, 12, 14, 15 and 18-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-9, 11, 12, 14, 15 and 18-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Receipt of response dated 2-14-11 is acknowledged.

Claims 1-9, 14, 15 and 18-34 are pending in the instant application.

The following rejection of record has been maintained:

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-9, 11-12, 14-15 and 18-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshikazu Takata (Macromolecular rapid Commun. 1997, submitted on PTO-1449) in view of US 5362486 to Nandagiri et al and JP 2001158724 (JP 724, submitted on PTO-1449, a full translation attached to the action dated 9-16-08).

Takata teaches cyclic carbonates that are expandable monomers on polymerization, by single ring-open polymerization (lines bridging pages 461-462). Takata teaches various six and seven-member cyclic carbonates. A list of the polymers have been described in Table 1, table 3 and Figure 2., of which the compounds in Figure 2 include 6-7 member rings of cyclic carbonates, which meet the description for the instant cyclic carbonates, where $n=0$ and $R_2=O$, $x=O$ and $z=C_4$ alkylene of claim 1 and item vi of claim 13. Takata does not teach cosmetic compositions or the instant claimed method of treating hair, skin or nails.

Nandagiri teaches hair treating compositions comprising one or more oligomer that are polymerized in situ for increased hair body to hair; provides better and continuous polymer films and on to hair, and also protects and strengthens hair (abstract; col. 1-2). According to Nandagiri, film-forming polymers are used to provide a flexible sheath of polymeric film on the shaped hair after drying and therefore for mechanical reasons retard the return of each individual hair to its original shape (col. 2, L 3-23). According to Nandagiri, insitu polymerization is better than applying polymers to hair and the monomers that polymerize in situ should not be irritating and harmful to skin (col. 2, L 35-67). Nandagiri teaches aqueous-alcoholic compositions comprising such monomers in the form of mousse, lotion, milk etc (col.4). Nandagiri also suggests monomers activated by heat or light (col. 7-8) as being suitable. In addition to the monomers, Nandagiri teaches reducing agents such as sulfites, bisulfites, persulfates etc (col. 9, l 1-12), azo compounds (col. 9, l 13-15), polysiloxane and other conditioners (col. 10-11), cosmetic additives such as thickeners, surfactants, dyes, softeners, pearlescent agents, fragrances etc (col. 12-14) and the composition may be in the form of hair spray.

JP 724 teaches a hair dye composition comprising a 1,3-dioxolan-2-one derivative (which is a cyclic carbonate) in combination with an acidic dye and a water soluble polymer (abstract). The cyclic carbonate described in formula 2 recites variable R, which is $-(OR_2)_n-OR_1$ or $-(OR_2)_nOCOR_1$, where R_1 is an integer of 0-30 and R_2 is an alkylene group of C-4 carbons. For the claimed additional compounds (claims 20-34), JP 724 teaches polymer (0020), wetting agents (0028), solubilizing agents, pH

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adjusting agents, dyes (0010) and in amounts that are within the claimed amounts ((0021). While JP does not teach the exactly claimed compounds, the cyclic carbonates of JP 724 are related to cyclic carbonates of Takata. In addition, the compounds of Takata also possess the properties of being able to polymerize in situ.

Therefore, it would have been obvious for one of an ordinary skill in the art at the time of the instant invention was made to employ the cyclic carbonate compounds taught by Takata, in cosmetic or personal care compositions such as hair dye compositions for treating hair because while Takata teaches cyclic carbonates for their efficiency in becoming expandable upon polymerization and suggests a possible role in cosmetic for treating skin and hair, Nandagiri suggests that monomeric compounds that are capable of polymerizing in situ impart body, volume and strength to hair without returning to the original shape of the hair. Further, Nandagiri also teaches incorporating additional cosmetic ingredients in compositions comprising such in situ polymerizable compounds. A skilled artisan would have employed the cyclic carbonates of Takata hair applications (JP 724) to impart body, volume, fullness and strength to the hair (owing to their ability to polymerize in vitro) because Nandagiri suggests that in situ polymerization is desirable. A skilled artisan would have employed appropriate amounts of the compounds of Takata with an expectation to achieve the desired hair dye affinity and hair strengthening effect.

Claims 1-9, 11-12, 14-15 and 18-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,156,077 to Shibata et al in view of Yoshikazu Takata

(Macromolecular rapid Commun. 1997, submitted on PTO-1449), 5362486 to Nandagiri et al and JP 2001158724 (JP 724, submitted on PTO-1449, a full translation attached to the action dated 9-16-08).

Shibata teaches a hair composition comprising an oxyalkylenated xanthan gum, a film forming polymer, a reducing agent and an oxidation dye (paragraph bridging col. 1-2). Shibata teaches oxidation dyes and reducing agents in col. 5-6. Shibata teaches inclusion of film formers in hair compositions in col. 7-8. Shibata fails to teach the instant cyclic carbonates. The amounts of each of the components taught by Takata are within the claimed ranges.

The teachings of Takata, Nandagiri and JP 274 have been discussed above. Therefore, it would have been obvious for one of an ordinary skill in the art at the time of the instant invention was made to employ the cyclic carbonate compounds taught by Takata, in hair care compositions of Shibata as film forming polymers because Nandagiri teaches the advantages of monomers polymerizing in situ over applying film-forming polymers such as impart body, volume and strength to hair without returning to the original shape of the hair. Further, a skilled artisan would have expected that the compositions of Takata would increase the affinity of hair dyes of Shibata because JP 274 teaches the related cyclic carbonate compounds having improved affinity of hair dyes to the hair fibers. A skilled artisan would have employed appropriate amounts of the compounds of Takata with an expectation improve hair volume, hair strengthening effect and also not observe any irritation with the compounds of Takata. Similar properties may normally be presumed when compounds are very close in structure.

Dillon, 919 F.2d at 693, 696, 16 USPQ2d at 1901, 1904. See also In re Grabiak, 769 F.2d 729, 731, 226 USPQ 870, 871 (Fed. Cir. 1985).

Response to Arguments

2. Applicant's arguments filed 2-14-11 have been fully considered but they are not persuasive.

3. Applicants argue that there is no reasonable expectation of with respect to the cyclic carbonates that similar structures will have similar properties with highly unpredictable arts such as chemical technology. It is argued that the cyclic carbonate of Takata is neither a homolog nor an isomer of the cyclic carbonates of JP 724 and that the cyclic carbonates of Takata are distinguishable from the cyclic carbonates of JP 724 in at least two aspects: 1) JP 724 teaches 5-membered rings as opposed to the 6-membered rings of Takata and the cyclic carbonate of JP 724 are substituted by a carbon chain comprising at least one oxygen, but Takata's cyclic carbonate is substituted by two methyl. It is argued that structural similarity alone is not sufficient to establish obviousness. 2) According to fig. 2 of Takata, propylene carbonate shrinks after polymerization and the 2-oxo-1,3-dioxane, a positional isomer, expands upon polymerization. Therefore, it is argued that even with similar structures, one cannot expect similar properties and hence a structurally more remote cyclic carbonate of Takata (that meets the instant claimed cyclic carbonates). It is also argued that Takata does not use the compounds for cosmetic application.

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4. Applicants' arguments are not persuasive because JP 724 has not been relied upon for the polymerization of the cyclic carbonates (of 5 or even 6-membered rings). Takata admittedly teaches polymerizable compounds that fall within the scope of the claimed invention. Takata does not teach cosmetic compositions or the instant claimed method of treating hair, skin or nails. JP 724 has been cited to show that in general cyclic carbonates are employed for hair applications. According to Nandagiri, in situ polymerization is better than applying polymers to hair and the monomers that polymerize in situ should not be irritating and harmful to skin (col. 2, L 35-67). Because the cyclic carbonates of Takata are capable of being polymerizable by ring-opening polymerization, a skilled artisan would have employed the cyclic carbonates of Takata in hair applications because in general cyclic carbonates are known for hair affinity and safety and further Nandagiri teaches in situ polymerization is less irritating and less harmful to skin. In this regard, Takata teach that the cyclic carbonates described therein are highly efficient in polymerization efficiency with a single ring opening polymerization. Therefore, the argument that the cyclic carbonate of Takata is neither a homolog nor an isomer of the cyclic carbonates of JP 724 and that the cyclic carbonates of Takata are distinguishable from the cyclic carbonates of JP 724 is unpersuasive.

5. It is argued that Nandagiri teaches highly unpredictable and inconsistent. Therefore, it is argued that the combination does not suggest a reasonable level of success. However, the argument is not persuasive because Nandagiri specifically emphasizes in situ polymerization in the absence of any irritating and harmful species such as resorcinol. Even though cyclic carbonates such as those taught by JP 724 are

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known to employ in hair care compositions, it is from the teachings of Nandagiri that one skilled in the art would be motivated to employ the compounds of Takata in hair care application such as those taught by Nandagiri (or JP 724). A skilled artisan would have expected that the cyclic carbonates such as 6-membered ring compounds of Takata would be more suitable in hair care because Nandagiri suggests polymerization to form continuous films is desirable for hair application.

6. Applicants argue that Shibata teaches film-formers in hair care and does not rectify the deficiencies discussed above. However, the arguments regarding Nandagiri, JP 724 and Takata have been addressed above and are incorporated here. Shibata has not been cited for the claimed cyclic carbonates.

Upon careful consideration, the following rejections of record have been withdrawn:

Claims 1-9, 11-12, 14-15 and 18-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over **OR** Nandagiri et al and Takata in view of JP 724 **OR** JP 724 and Takata in view of Nandagiri et al.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAKSHMI CHANNAVAJJALA whose telephone number is (571)272-0591. The examiner can normally be reached on 9.00 AM -5.30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sharmila G. Landau can be reached on 571-272-0614. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Lakshmi S Channavajjala/
Primary Examiner, Art Unit 1611